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SUSTAINABLE INNOVATION AND INVESTMENT DEVELOPMENT OF INDUSTRIAL ENTERPRISE UNDER CONDITIONS OF INSTABILITY OF ECONOMIC ENVIRONMENT

ЗАБЕЗПЕЧЕННЯ СТАЛОГО ІННОВАЦІЙНО-ІНВЕСТИЦІЙНОГО РОЗВИТКУ ПРОМИСЛОВОГО ПІДПРИЄМСТВА В УМОВАХ НЕСТАБІЛЬНОСТІ ЕКОНОМІЧНОГО СЕРЕДОВИЩА

ANNOTATION

In modern realities the innovation investment activity of enterprises is a key factor in economic growth. Article analyses current state and structure of innovation-investment activity of enterprises in Ukraine. Attention is paid to the role of government in ensuring sustainable innovation-investment development of enterprises. The basic mechanism of sustainable innovative investment development that features transferring forecasts of external environment into elements of innovation investment strategy is offered. Conditions of activization of innovation-investment activity, conditions and priorities for sustainable innovation-investment development are defined.

Keywords: innovation investment activity, sustainable development, industry, mechanism, strategy.

КІДАТОНА

У сучасних реаліях інноваційно-інвестиційна активність підприємств є ключовим фактором економічного зростання. У статті проаналізовано поточний стан та структуру інноваційно-інвестиційної активності українських підприємств. Приділено увагу ролі держави у забезпеченні сталого інноваційно-інвестиційного розвитку підприємств. Запропоновано базовий механізм сталого інноваційно-інвестиційного розвитку, який передбачає переведення прогнозів зовнішнього середовища у елементи інноваційно-інвестиційної стратегії. Виділено умови активізації інноваційно-інвестиційної діяльності, умови та пріоритети забезпечення сталого інноваційно-інвестиційного розвитку.

Ключові слова: інноваційно-інвестиційна діяльність, сталий розвиток, промисловість, механізм, стратегія.

ВИПАТОННА

В современных условиях инновационно-инвестиционная активность предприятий является ключевым фактором экономического роста. В статье проанализировано существующее состояние и структуру инновационно-инвестиционной активности украинских предприятий. Уделено внимание роли государства в обеспечении устойчивого инновационно-инвестиционного развития предприятий. Предложен базовый механизм устойчивого инновационно-инвестиционного развития, который предполагает перевод прогнозов внешней среды в элементы инновационно-инвестиционной стратегии. Выделены условия активизицииинновационно-инвестиционной деятельности и приоритеты по обеспечению устойчивого инновационно-инвестиционного развития.

Ключевые слова: инновационно-инвестиционная деятельность, устойчивое развитие, промышленность, механизм, стратегия.

Introduction. The transition of Ukrainian economy to modern economic growth strategy is associated with investment in innovation, technological renewal, modernization and reconstruction of existing industrial enterprises, targeted changes in the structure of the reproductive process in manufacture.

Under modern conditions innovation and investment activity is the main factor of development and stability of the national economy. Investment in innovation helps to increase the flexibility of industrial production, ensures the accumulation of current assets, serves as an important element of the total capital of the enterprise that impacts the manufacturing output, structure of modernized production, qualification and motivation of the staff.

On the other hand, the unreasonable use of financial resources leads to freezing and ageing of production facilities and, as a consequence, to the degradation and loss of economic security.

Well-founded innovation investment decision making that ensures the competitiveness of industrial products and services, profitability and liquidity of an enterprise, requires an analysis of the causes of the financial and economic crisis and the degradation of the reproduction process in the real sector of Ukrainian economy to propose ways of activization of innovative-investment activity of the enterprise for sustainable innovation and investment growth.

Analysis of recent researches and publications. Aspects of strategic management, innovation and investment activities were studied by such foreign scientists as I. Ansoff, W. Behrens, C. Bowman, A. Gradov, P. Drucker, W. King, D. Clealand, A. Strickland, A. Thompson, G. Trefilova, L. Trofimova, W. Sharpe, J. Schumpeter. In Ukrainian scientific literature attention to the issues of innovation-investment development of an industrial enterprise were paid by such researchers as O. Amosha, A. Butenko, I. Blank, B. Burzhynskyi, A. Halchynskyi, V. Heiets, I. Hruznov, V. Hryniova, S. Illiashenko, N. Kyzym, N. Merkulov, Y. Petrovych, Z. Sokolovska, S. Filyppova, S. Kharichkov, N. Chukhrai, N. Sharko, A. Yakovlev. In particular, S. Zakharin, V. Zakharchenko, L. Fedulova analyzed the main trends of innovation and investment activity in the industrial sector, the reasons for the low innovation activity of Ukrainian enterprises. O. Denysiuk, I. Shovkun revealed the relationship between investment activity and innovation development of the enterprise. V. Kasyanenko, N. Yakubovskyi considered the problems of innovative development of industrial enterprises under conditions of economic instability.

Previously unsettled problem constituent. However, theoretical-methodological and applied aspects of innovative-investment development of industrial enterprises require further development, in particular, the issue of sustainability of innovative-investment development of industrial enterprise under conditions of instability of external environment remains unsolved.

Main purpose of the article. The purpose of this article is to further deepen the theoretical and methodological foundations and develop recommendations for the sustainable innovation and investment development of industrial enterprise under conditions of instability of economic environment.

Results and discussions. In modern Ukrainian realities, which are defined as overcoming the consequences of the protracted transformation period and the global economic crisis, recovery of innovation and investment activities is the only possible solution to the situation that defines the preconditions for further economic growth. The elements of crisis of the transformation period structural, innovation, investment, budget, tax, human components [1-4]. A crisis in the innovation and investment environment should be considered as the most essential element of the transformation period, because its manifestations are the most significant for the national economy as a whole. Currently, the crisis in this sector is evident in underinvestment and divestment [5, p. 24]. During the 1990s and mid-2000s investment factor supported positive dynamics of growth of industrial output, but with the outbreak of the global financial crisis (2008) investment and industrial production tended to decline.

Since 2008 there has been a decrease in the share of industry in GDP from 31.3% in 2007 to 23.6% in 2015, which creates negative prospects for economic growth. This necessitates focusing on

measures to stimulate entrepreneurship to identify how industrial development can be enhanced [5; 6].

Studies of economic crises and the experience of many countries show that stabilization and economic growth begins with the increase in innovative-investment activity, which means investing in innovation is a component of economic growth, that is confirmed by all known theories of economic growth (classical, neoclassical, Keynesian, neo-Keynesian).

The lack of many theoretical and methodological bases of innovative-investment policy of the enterprises leads to unsystematic character of innovative-investment projects, exploitation of industrial facilities that do not meet modern trends, the reduction of innovations for investment, decline in the competitiveness of enterprises.

Modern conditions of economic development are characterized by high rates of annual changes of such macroeconomic indicators as growth of world output, global trade, concentration of capital, transfer of innovation, capital intensity of scientific researches etc. These changes indicate the dynamic processes of integration, reflected in the emergence of the global economic system. For industrial enterprises this means a fast changing external and internal environment and the need for adaptation on the basis of innovative-investment policy in order to ensure sustainable development.

The main feature of the current state of the economy of Ukraine is an urgent need to invest in innovation, enhance the innovation and investment activities of all business entities.

During 2005-2015, the proportion of enterprises that implemented innovations slowly grew from 8.2% in 2005 to 15.2% in 2015. At the same time the share of sales of innovative products in the volume of industrial production had a downward trend and decreased from 9.4% in 2000 to 1.4% in 2015 [6]. According to the report of the World Economic Forum, Ukraine occupies the 25th position among 130 countries on the Human Capital Index [7], but the 56th place among 128 countries on the Global Innovation Index [8].

Fedulova L. points out as important component of innovation activity «...specialization and technological level of production. Thus, the greatest values of indicators of innovation activity have been demonstrated by enterprises in middle-tech industries; in particular, in 2011. The level of their innovation activity was only 47%, which is close to the European average; high-tech industries -26.4%» [9, p. 20].

Such factors as increased demand for home-produced goods on the domestic market contributed to this. Investments are necessary to meet this demand, firstly to overcome the industrial and technological limitations. This situation is confirmed by dynamics of investments in fixed capital (tab. 1).

These data confirm studies of Zakharin S.: «The negative effects of the economic crisis are clearly evident in the investment field... in Janu-

ary-September 2009 compared to the same period of the previous year, the index of fixed capital investment reached 56,3%, investment decreased by 43.7%. Declining trends of investment activity had emerged earlier: the amount of investment in fixed capital in 2008 accounted for 24.5% of GDP, in 2007 - 26.4% of GDP... There is a case for the claim that, in general, financial markets inefficiently perform their assigned function of redistribution of investment resources among different sectors of the economy» [10, c. 50]. In 2010, the rate of decline of capital investment slowed, and since 2011 positive dynamics of growth of investment was observed. A turning point occurred in 2014, when the political change, the beginning of the military conflict in the East of the country, the loss of part of the production capacity and change of the hryvnia exchange rate led to a decrease in domestic investment of enterprises and the outflow of foreign investment. According to Denysiuk E. M. 91,26% of outflow of foreign direct investment in 2014 occurred due to devaluation of the national currency [11, p. 9].

The poor state of industrial production (low capital productivity and profitability) is confirmed by statistical data (tab. 2).

I. Shovkun confirms in the case of the hightech sector: «...the decrease in the value of fixed assets is the evidence of limited reproduction of material and technical base of high-tech sector and progressive loss of the material basis for the technological development of the national economy in the future» [12, p. 30].

Fixed assets of enterprises of the real sector of the economy have consistently demonstrated high rates of wear. V.A. Kasyanenko notices: «Despite the constant increase in their volume in terms of value, the degree of wear of fixed assets has been exceeding 50% since 2006, which is a poor indicator of the activity of enterprises. Along with this it is necessary to pay attention to the sharp rise of the indicator in 2008, 2010 and 2014 compared to previous reporting periods. Thus, in 2014 indicator value was critical at 83.5%, which testifies to the inability of enterprises to efficiently use existing fixed assets when implementing new technologies and to the need for modernization of material-technical base of the industry in the near future» [13, p. 100]. One of the most important structural characteristics of innovation-investment process is the sectoral structure of investments, the transformation of which adequately reflects the trends of structural economic policies in the country.

The process of transformation of Ukraine's economy is most clearly expressed in the institutional reorganizations, changes of property relations that form the basis of the economic system and the development of new economic structures. Experts note that a characteristic feature of economic transformation is the creation of polyform systems of a new type of social order that are fundamentally different from the concept of social formation in the nature of interaction of various social forces and their structures, development forms and outcomes. Along with their appear-

Table 1 Indexes of investment in fixed capital by types of industrial activities (%)

Indicators		Year						
		2012	2013	2014	2015			
Inductry	141,6	107,5	100,3	74,3	80,1			
Manufacturing	124,6	95,6	107,7	79,0	86,3			
- manufacture of computer, electronic and optical products	146,1	69,7	96,6	80,7	130,7			
- manufacture of electrical equipment	100,6	126,0	96,1	66,3	99,3			
- other manufacturing	125,6	123,8	80,7	72,6	74,1			
- manufacture of basic metals and fabricated metal products	125,3	95,9	114,9	89,9	83,5			
- manufacture of chemicals and chemical products	90,4	96,2	99,2	68,7	72,3			
- manufacture of food products	137,3	96,6	112,8	78,3	75,9			
- manufacture of textiles, apparel, leather and related products	103,3	86,6	101,7	105,5	135,9			
- electricity, gas, steam and air-conditioning supply	194,0	102,5	131,5	70,3	72,3			

Source: Statistical Yearbook of Ukraine for 2015 [6, p. 191]

Basic indicators of industrial development of Ukraine

Indicators	Year									
	2010	2011	2012	2013	2014	2015				
Gross value added of industry in GDP, %	25,3	25,2	24,8	22,7	23,5	23,6				
Fixed assets in industry, mln. UAH	1101199	1116367	1603646	1749110	1937821	3842517				
Industrial output in total output, %	42,8	43,2	41,1	38,3	38,9	•••				
Cost effectiveness of operational activity of industrial enterprises, %	3,5	4,7	3,4	3,0	1,6	0,9				
Share of unprofitable enterprises, %	41,3	37,4	37,6	36,8	37	27				

Source: Statistical Yearbook of Ukraine for 2015 [6]

Table 2

ance, the nature of social progress, the structure of the economy itself gradually changes.

Obviously the ways to overcome the crisis state of the domestic economy should be sought in economic growth. Therefore, innovative investment activity of industrial enterprises is of paramount importance because it is the basis for the creation of modern high-tech manufacture. But the intensification of innovation activities requires funding and the real demand from potential investors is very small or non-existent.

In these circumstances, the state has two possible scenarios of behavior. The state can wait for stabilization of economic situation in the country, profit stability of enterprises, generation of the effective demand for innovative technology, the emergence of stable sources that will satisfy the demands of scientific and technical sphere, when activization of innovation and investment activity will happen on its own. Otherwise it needs to apply all possible measures to increase innovation and investment activity through the use of all opportunities to stimulate the economy to adopt innovative technologies and introduce advanced technological equipment in manufacture. The period of obsolescence of the technology is currently 5-7 years, and for the technology in electronics it is 2-3 years. That is why the role of the state in stimulating innovation activity can be decisive. The innovation process is continuous, and in the global competition, the time factor is crucial. Without intensive actions of the state favourable conditions for the re-equipment of production based on innovation may not occur at all.

Clearly, receiving feedback from the production, which could serve as an incentive to scientific and technological activities is very important. However, the initiative can belong to innovative-investment sphere directly. Provided necessary socio-economic infrastructure is created in the country, finding the consumer is possible. American researchers identify two types of generation of innovations: demand pull, when need for innovation occurs in manufacturing, that makes the order to research organizations to conduct the necessary research and development work; technology push, when the emergence of a new technology that creates new opportunities attracts interest of commercial structures, which positively evaluate the potential of the introduction of this innovation onto the market. The share of the first type of innovation generation accounts for 74% of all innovations, the share of the second - 22% [14]. These data indicate that the market and government initiatives can effectively coexist simultaneously, reinforcing the effect of each other.

Thus, theoretical considerations, and the economic situation in the country give grounds to assert that solution of key problems of the national economy – integration of scientific-technical and production spheres, requires the active participation and initiative of the state.

The task for researchers is ensuring linkages and coherence of the general development strategy and sustainable innovation and investment development. Most strategies seem to include an innovative component, but in fact it is an import substitution, or the introduction of new technologies well-known in the world. A national innovation system that would meet the objectives and requirements of the sustainable development strategy of the country is not yet established. Along with that, the necessity for choice of sustainable innovation and investment development in the context of system transformation processes, the global economic crisis and political instability determines a range of economic issues which the industry currently faces. Sustainable development requires creation and launch of mechanisms, based on laws of the market. The reconstruction of the entire industrial production is necessary. In Ukraine it particularly applies to the ruined industrial complex of Donbass.

The company is part of a region, therefore, it takes into account the regional policy and development strategy during the design of its own strategy. In turn, the macro-level creates the conditions for activities of enterprises in scientific and technological areas which are in line with the world development tendencies and innovative and investment activity of enterprises through direct and indirect influence is directed towards these trends. Thus, improving the sustainability of innovative-investment development of an enterprise largely depends on regional strategies that aim at binding the activity of the enterprise to the objectives of the region. That requires clear definition of goals and objectives before administrative decisions are made.

During the process of building the conceptual model based on the theory of sustainable innovation and investment development particular attention is paid to the concept of sustainability and ways of achieving it along with the main conceptual propositions of the theory of innovation and investment sustainable development, which can be represented in the following form:

- 1. Principle-based approach: on the basis of the harmonious interaction of economic, social and industrial aspects of sustainable development and, taking into consideration strengths and patterns of the market create economic mechanisms of higher order than the current ones.
- 2. Instrumentation: the use of specific measures of activities regulation, aimed at the inclusive development while preserving factors of reproduction of the product.
- 3. Motivation of participants of the production process: taking current realities into account, set new rules with new targets, and create the conditions under which participants will have to obey these rules. If incentives do not change, strategy does not fundamentally change also.
- 4. Desired outcome: sustainable economic growth, resistance to external negative factors,

the preservation and development of productive resources.

The basic principles of the modern market model of sustainable innovation and investment development could be:

- strategic review of accomplished work, including during and after crisis situations with a list of anti-crisis measures as a factor of resistance to negative external events;
- modern economic approaches, such as securing the right to innovative entrepreneurial activities, identifying points of growth and development of breakthrough innovative technologies;
- search for new economic models aimed at obtaining profit and its maximization;
- optimization of costs to reach a balanced budget;
- development of additional tools in the field of finance that will allow to increase economic flexibility and productivity in future. Future budgets should be based on estimates of sustainability of innovative development;
- flexible managerial and organizational structures.

The basic economic mechanism of sustainable innovation and investment development provides the opportunity to achieve strategic goals by transferring the prepared forecasts into the realities of specific market strategies taking into account key environmental factors. Its goal is to do everything possible for the formation of product competitiveness, to increase market capitalization and economic efficiency.

The corporatization of enterprises and their subsequent privatization are not the only condition for effective market adaptation. There exists a list of measures also required: formation of mechanisms of effective modern management of enterprises; implementation of organizational, operational and financial restructuring of enterprises; attracting strategic investors (domestic or foreign), who can bring with them not only capital but also managerial experience, and also help to enter new markets; launch of innovative-investment projects; the creation of the necessary structures and institutions (organizational, legal, investment) for the effective accumulation and flow of capital, i.e. the formation of capital market.

Crisis state of the economy requires a detailed analysis of the global economic crisis and results of anti-crisis actions at all levels of management, including the enterprise level. After have studied the already identified impacts, it is possible to develop preventive measures aimed at preserving existing capacity. In this respect, an increasing role of power structures responsible for the actual tasks is evident.

The transition to fully-fledged sustainable innovation and investment development involves the implementation of the following conditions at least:

- formation of mechanism of expanded reproduction, which takes into account the interaction of production, income and final demand;

- creation of groups of interconnected industries that constitute the system integrity, which has growth potential and sufficient critical mass for qualitative changes;
- development of mechanisms to improve the efficiency and competitiveness, including:
- a) the new requirements and criteria for innovative-investment development, which increase the ability of companies to renew, to respond to a variety of external challenges;
- b) the formation of its own development potential, sufficient to ensure strong positions in a new economic world;
- c) flexible manufacturing with a focus on consumers, including individual ones.

It would also be advantageous to develop a mechanism of regulation of enterprise activity based on the structure created by enterprise management, which would make obligatory decisions. Its functions include interaction with other structural units, along with the development and approval of rules of operation on the markets because the nature of many functions is changing and adjustments need to be performed. So, instead of direct participation a new role appears such as the creation and maintenance of institutional, legal and commercial infrastructure; modeling ideological and value systems; ensuring the agreement on allocation of resources and a number of other ones.

Thus, sustainability is an integral characteristic, which requires: basic trajectories of development (goals and strategies); resource support (financial, logistical, personnel).

Conclusions. The main task for the near future is to increase innovation and investment activity not only in export-oriented industries, but the establishment of a mechanism of redistribution of investment resources to the modernization of fixed assets and renovation, the creation of competitive industries, able to satisfy the requirements of demand and to ensure the achievement of socio-economic proportionality at all levels of the national economy. The main areas of this important task are: improvement of innovation and investment climate, structural and functional restructuring, the restructuring of uncompetitive enterprises and, consequently, increase innovation and investment activity.

The analysis of the responses of entrepreneurs about the factors influencing entrepreneurial activity, suggests that industrial leaders often name the following factors as those that could stimulate innovation and investment activity: increasing demand for innovative products, the existence of innovation developments of different levels of readiness, the existence of scientific and technological potential.

Negative factors include: lack of finance, ageing of production facilities, low-skilled staff, an undeveloped market of raw materials, poor support from the state, the instability of the economic situation.

To sum up, it should be emphasized that the development of the institutional infrastructure of the innovation and investment market is closely related to general economic processes and trends. The solution to the main problems of the Ukrainian economy requires a systemic approach, integrated use of organizational, economic and social mechanisms, selection of government development priorities, which in turn will stimulate increase in innovation and investment activity of Ukrainian enterprises and, consequently, provide tools for overcoming the crisis phenomena, recovering national competitiveness and economic growth.

REFERENCES:

- Zakharchenko, V.I. (Eds.). (2014). Aktualnipitannyainnovatsi ynogorozvitkuderzhavi, regioniv, pidpriemstv. [Topical issues of innovative development of the state, regions, enterprises]. Lugansk: Noulidzh.
- Geiets, V. (2010). Liberalno-demokratichnizasadi: kursnamodernizatsiyuUkrayini [The liberal democratic foundations: commitment to modernization of Ukraine]. EkonomikaUkrayini – The economy of Ukraine, 3, pp.4-20.
- Geiets, V.(2003) [Eds.]EkonomikaUkrayini: strategiyaipolitika dovgostrokovogorozvitku. [The economy of Ukraine:strategy and policy of long-term development]. Kyiv: IEP NANU.
- Zaharchenko, V.I., Merkulov, N.N., & Shiryaeva, L.V. (2011). Innovatsionnoerazvitie v Ukraine: nauka, tehnologiya, praktika. [Innovation development in Ukraine: science, technology, practice]. Odessa: Favorit.
- Yakubovskiy, N.N. (2013).Strukturnyiyvektoraktivizatsiipro myishlennogorazvitiya [The structural vector of activation ofthe industrial development].EkonomikaUkrayini – TheeconomyofUkraine,12, pp. 22 – 39.
- StatistichniyschorichnikUkrayiniza 2015 rik.(2016).
 [StatisticalYearbookofUkraine for 2015]. Kyiv: DSSU. www.

- ukrstat.gov.uaRetrieved from: http://www.ukrstat.gov.ua/druk/publicat/kat_u/2016/zb/11/zb_2015_ukr.zip.
- HumanCapitalReport (2016). http://reports.weforum.org. Retrieved from:http://reports.weforum.org/human-capital-report-2016/economies/#economy=UKR
- IndicatorRankings&Analysis. (2016).https://www. globalinnovationindex.org.Retrieved from: https://www. globalinnovationindex.org/analysis-indicator.
- Fedulova, L.I. (2013)Innovatsionnyivektorrazvitiya promyishlennostiUkrainy. [The innovative vector of development of Ukraine'sindustry]. EkonomikaUkrayini TheeconomyofUkraine, 4–5, pp. 15 23; pp. 30 37.
- Zaharin, S. (2010). Finansovyierychahiaktivizatsiiinvestitsion noy i innovatsionnoydeyatelnosti. [Use of financial instruments to stimulate investment and innovation]. Ekonomika Ukrayini – Theeconomyof Ukraine, 12,pp 48 – 58.
- Denisyuk, O.M. (2015). Analiz investitsiynogoseredovisch aUkrayini: isuchasnItendentsiyi taperspektivi. [Analysis of the investment environment in Ukraine: modern trends and prospects]. Investitsiyi: praktikatadosvid – Investment: practice and experience, 21, pp. 7–11.
- Shovkun, I.A. (2013). Finansovyiypotentsialtehnologichesko govosproizvodstva v pererabatyivayuscheypromyishlennosti v regionahUkrainy. [The financial potential of a technological reproduction in the processing industry in Ukraine's regions]. EkonomikaUkrayini – TheeconomyofUkraine,13,pp. 27 – 37.
- Kasyanenko, V.O. (2015).Formalizatsiyastrategichnihzagrozt amozhlivosteyefektivnogorozvitkuinnovatsiynogopotentsialue konomikiUkrayini. [Formalizingstrategicthreatsandopportuniti esfortheeffectivedevelopmentofinnovativepotentialoftheUkrain eeconomy].Mehanizmregulyuvannyaekonomiki – Mechanizm of Economic Regulation,4,pp. 97-107.
- Nemet,G.F. (2009, June).Demand-pull, technology-push, and government-ledincentivesfornon-incrementaltechnicalchange. Research Policy, Volume 38, pp. 700-709.
- Zaharchenko, V.I., Merkulov, M.M. (2014). Rozvitok strategichnih pidhodiv do upravlinnya pidpriemstvom u nestabilnih umovah, Donetsk: Noulidzh.